

ABSTRACT

A high-density fissile material nuclear fuel in a form of an assembly of elementary wires, most of which are constituted by fissile material, and a method for producing the nuclear fuel. The wires are assembled by stranding, braiding, or weaving and the assembly is contained in a stainless ductile casing. The elementary wires are compressed by deforming the casing, and the elementary wires of fissile material are fine enough to allow for the size accommodation of the fuel under effects of irradiation during burnup and for the gaseous fission products to be removed.